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Planning Community Junior College Buildings

By D. G. MORRISON*

HOW SHOULD community junior colleges be planned? Should they be modeled on high school facilities? Should they copy the plans of liberal arts colleges, or should they be unique in design? What acreage is necessary? How can buildings be designed for changing curriculums? Can the facilities be economically built and also be functional and attractive? Will compromises have to be made? These and similar questions are today being asked by administrators, teachers, architects, and lay committees in every part of the United States.

Identifying Purposes

There appear to be at least five logical steps to planning a junior college plant. If no previous planning has been done, the first step is to determine the philosophy of community junior colleges in general, the principles upon which this particular college is being founded, and the purposes for which it will operate.

A carefully written statement prepared by the administrator will not suffice. The administration, the faculty, the lay committees, and the students should be included in this first step to insure that the distinct purposes in college transfer, terminal technical, general and adult education, community service, and guidance are all considered and that a priority of purposes is agreed upon. The architect will appreciate the opportunity to sit in on these discussions, for nothing better illuminates what is needed than an understanding of why it is needed. Clark College, in Vancouver, Wash., did an excellent job on step one.

Surveying Educational Needs

The second step is to survey the educational needs of the service area. This can best be done by committees of lay and professional members. In many cases, it will be necessary to collect new material, but wherever possible, local, State, and

*Specialist for Community-Junior Colleges, Division of Higher Education, Office of Education.

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national statistics gathered from reliable sources should be used. Expert help should be available to see that all material gathered is accurate and useful.

Step two checks and adds specificity to step one. It results in agreement that "These are the programs we should offer in our community college." The Florida Community College Council used this step to good advantage in planning.

Describing Space Requirements

The third step is sometimes called, "Educational Specifications." This means writing the space requirements for the programs to be housed—describing the kind, amount, and quality of the space needed in terms of the program or activity planned. The faculty has a major responsibility in this step, but should rely on others for raising necessary questions. These questions should relate to the kind of activity, number of students, time the program is offered, multiple purposes of the room, unusual requirements for light or ventilation, and relationship to other programs.

At the conclusion of this step, the architect will have a clear picture of what is needed in each unit. In his notes, he will also have 30 or 40 points that will need to be kept in mind during the planning process. State and local building and curriculum consultants can well be used in step three. Many junior colleges in California, Texas, and other States could be used as examples of careful work on step three.

As for the time element, it may be noted that the Washington State Guide for Planning Community Junior Colleges [1] recommends 6 months for each step or a total of 2½ years from the start of the planning to the beginning of construction. The planning of the Everett, Washington, Junior College plant, as described in a forthcoming number of the *School Board Journal* [2] took over 5 years. Usually, the available time is much less than is desired. In many cases a new start is not needed, but previous planning should always be reviewed to make sure that it is sound and that it recognizes present conditions.

For a community junior college, it seems especially important that cooperative community planning be used. It takes real leadership to insure that the technical skill of the architect, the wishes and expectations of the teachers and students, the deep interest of the citizens, and the limiting factors of available funds, site size, and location are all combined to achieve the main goal. The purpose of the planning must be kept clearly in mind. It is to secure a functional, economical, attractive facility specifically designed to serve the educational needs of the students of the area. The building is not a monument to some administrator or some architect, nor inappropriate to the site, the community, or the purpose, but one that all the community can point to with pride as "our junior college."

Making Preliminary Plans

The fourth step is preliminary planning. Before the beginning of this step, it is important that all concerned know the limitations within which the planning is to be done. This knowledge requires answers to such questions as: How large an enrollment are we planning for, now and in the future? How much money is available for the first buildings? What plans have been made for future construction? Is the site we have selected adequate? Can the site be expanded, if necessary?

In the preliminary planning, the architect should use every possible device to visualize for the committees what he is designing for each specific program. "Is this what you had in mind?" should be repeated so often that an abbreviated form can be used. As part of this step, the models of various units or sections of units can be grouped and regrouped to find the most useable and reasonable arrangement. Sketches or unit models will gradually be replaced by preliminary drawings and full-size scale models. It is essential that the total plot plan be developed now, even though the immediate plans for building are extremely limited.

A great many decisions will need to be reached in step four. The administration will be well advised to see that skill in decision-making is developed gradually and that a careful design of gathering and presenting material, checking material, using consultant help, and reaching agreement is used on all decisions. Consideration will have to be given questions whether it is necessary to offer the same programs three times daily—morning, afternoon, and night; whether certain sections of the building should be planned for daytime use only; and to the

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[1] Guide for Planning Junior College Buildings in the State of Washington. A. C. Tjomsland and D. G. Morrison, State Board of Education, Olympia, Washington, September 1957.

[2] "Planning Public Community Junior College Buildings," F. Giles, S. V. Martorana, and D. G. Morrison, *School Board Journal*, coming issue.

type of structure most suitable for a particular site and community.

Answers will also have to be sought to questions of how inflexible items, such as bearing walls, plumbing, and stairs may be minimized; of the acreage required for parking at 100 to 125 cars per acre; and of the adequacy of space allocation in terms of the flow-pattern of student traffic in existing buildings.

Finally, it will have to be determined whether sufficient storage space has been provided or whether valuable class space will be used for this purpose; whether expansion units are included within each building; and how many square feet per pupil has been allowed in the total plan. Some States have chosen 140 square feet per pupil as the maximum allowed for State matching. Others favor amounts ranging from 136 to 145 square feet per pupil for the total plant.

Making Final Plans

The fifth step is final planning. This can be a step that results in cooperation, harmony, and satisfaction, or the direct opposite. Which it is, will depend largely on the first four steps. The administration and school board have the final decisions to make. If the faculty and others have been invited to help in the planning and have not been apprised of the limitations which must finally be used, the architect will find himself in the widening chasm between what is desirable and what is possible. The administration will be unhappy with the faculty for being impractical and with the architect for encouraging them. The faculty will be angry and disillusioned because "none of our suggestions was followed." This certainly will not happen if cooperative planning is done in all five steps and adequate time is taken in each.

Trends in Residential Construction in Institutions of Higher Education

By JOHN B. RORK*

LIMITED FINANCIAL RESOURCES require colleges and universities to plan expenditures carefully in order to get the best educational return as well as to insure economy. Few institutions can ignore the problem of providing additional residential facilities for present and future enrollments.

Colleges and universities with slightly more than 90 percent of the Nation's higher education enrollment in the spring of 1956 were housing about 37 percent of all full-time students in college-owned or operated residential buildings. In planning for the future, is it likely that more of the total budget than previously will be allocated for residential buildings? What housing uses will be considered most important? Will the emphasis be determined largely (1) by the number of students enrolled or (2), by geographic location or (3), by funds available for housing? Or will there be no uniformity of emphasis? Preliminary data from the Office of Education's study of college and university facilities indicate trends and provide partial answers to some of these questions.

*Specialist for Higher Education Facilities, Office of Education.

Capital Expenditures and Estimates 1951–70

Institutions returning questionnaires (1,368) reported that higher educational facilities valued at $1,791,403,000 were constructed in the 5-year period 1951 to 1955 inclusive. Capital expenditures for these facilities by publicly controlled institutions were $1,103,408,000 and by privately controlled institutions, $687,995,000. Residential buildings cost $485,863,000, which was slightly more than 27 percent of the total capital disbursements. The largest percentage of total expenditures for residential construction in the continental United States was 34 percent in the 12-State North Central region, and the smallest percentage was 18 in the 11-State Western region. Expenditures by the United States service academies have been excluded from consideration.

The respondents indicated that total planned construction in the period 1956 through 1970 would cost approximately $5,469,771,000, of which $3,538,716,000 is planned by publicly, and $1,931,055,000 by privately, controlled institutions. Residential facilities being planned will cost about $1,588,376,000,

which is 29 percent of the planned total for capital outlay. Although in projected residential construction the North Central region will continue to lead in expenditures, dollar- and percentage-wise, as it did in 1951–55, it is in the West, Northeast, and South where larger proportions of the 1956–70 total capital outlay will be allocated for this purpose. Western colleges and universities plan to use 23.8 percent of their projected building expenditures for residential facilities but will continue to allocate a smaller percentage than any other region to this end.

An analysis of the projected 1956–70 expenditures reveals that as the projections reach into future years, plans and estimates become progressively more tentative. Of the total sum planned for the construction of physical facilities, it is reported that slightly more than 66 percent is to be expended during the 5-year period 1956 through 1960. For this same 5-year period, the data disclose that residential capital disbursements will be 71 percent of the total expenditures planned for this function through 1970.

Use Trends in Residential Planning

Expenditures for residential buildings constructed from 1951 through 1955 by use and by geographic region are shown in table 1. Excluding the United States service academies and institutions in outlying parts of the United States, colleges and universities in each region spent about one-half of the allotted funds for facilities for single men. Although, on a percentage basis, the Northeast and West spent more of their total residential funds for housing for single women, each was surpassed by the North Central and South. In general, more was spent on housing for faculty members than for married students. The North Central region, with proportionately a greater number of large public institutions offering substantial graduate programs, spent two and one-half times as much as all other regions combined for residential facilities for married students.

Table 2 reveals the uses that colleges and universities plan at this time for residential buildings to be constructed through 1970. In aggregate compilations, little change is to be noted except in housing for married students for which expenditures for planned construction will increase from 4.6 percent of residential capital outlay in the 1951–55 period to 9.7 percent for the years 1956 through 1970.

Use trends are more pronounced when the figures are analyzed by geographical region on a percentage basis. Only in the West will faculty housing increase in importance; all other regions will stress it less than in 1951–55. Although permanent residential facilities for married students are difficult to finance at current costs, a notable increase relative to 1951–55 is evident in all geographical areas, eightfold in the West, and about fourfold in the South and Northeast.

Respondents in the Northeast, North Central, and South report only minor changes in emphasis on housing for single men and single women students. Institutions in the West report a substantial decrease in housing for single women, and institutions in

Table 1.—Expenditures for residential buildings constructed by higher educational institutions, 1951–55, by use of buildings and by geographic regions

[Cost figures are in thousands of dollars]

Geographic regions	Total cost	Percent planned for—				
		Faculty housing	Married students	Single men	Single women	Other
Aggregate United States	$485,863	3.7	4.6	50.3	38.5	2.9
Northeast	117,646	3.4	1.5	49.8	44.9	.4
North Central	169,312	2.9	9.3	49.6	34.7	3.5
South	138,260	4.6	2.8	52.3	36.0	4.3
West	57,784	.8	1.0	51.2	43.6	3.4
U. S. service academies	1,571	100.0				
Outlying parts of the U. S.	1,290	59.5			40.5	

Table 2.—Estimated cost of residential buildings planned by higher educational institutions, 1956–70, by use of buildings, grouped by geographic regions, by spring 1956 full-time enrollments

[Cost figures are in thousands of dollars]

Region and enrollment	Total cost	Percent planned for—				
		Faculty housing	Married students	Single men	Single women	Other
Aggregate United States	$1,588,376	2.9	9.7	49.7	36.5	1.2
Below 500	171,803	4.5	5.6	38.9	50.1	.9
500–999	220,983	3.0	3.2	44.4	48.9	.5
1,000–1,999	273,284	4.5	6.6	45.3	41.8	1.8
2,000–4,999	404,457	3.5	7.2	56.3	31.2	1.8
5,000–9,999	284,221	1.1	14.5	52.1	31.8	.5
10,000 and more	233,628	.7	21.1	53.5	23.2	1.5
Northeast	403,944	2.5	5.7	45.2	45.4	1.2
Below 500	39,913	2.4	8.1	26.4	60.5	2.6
500–999	91,625	3.9	4.7	34.4	56.9	.1
1,000–1,999	78,995	2.9	2.3	40.2	52.3	2.3
2,000–4,999	76,216	2.5	1.8	62.9	30.5	2.3
5,000–9,999	66,919	1.8	15.9	48.2	33.9	.2
10,000 and more	50,276	----------	3.2	56.9	39.9	----------
North Central	517,384	2.2	13.6	48.1	34.3	1.8
Below 500	52,413	6.7	4.8	35.0	53.4	.1
500–999	64,144	.8	1.0	50.4	46.5	1.3
1,000–1,999	61,146	2.8	11.4	50.2	35.5	.1
2,000–4,999	110,521	4.8	6.5	44.6	39.8	4.3
5,000–9,999	89,753	.6	9.6	60.0	29.8	----------
10,000 and more	139,407	----------	32.0	46.0	19.4	2.6
South	352,943	2.6	11.3	46.9	38.8	.4
Below 500	44,367	5.5	5.8	35.1	53.3	.3
500–999	42,639	5.2	4.7	44.7	45.1	.3
1,000–1,999	85,121	4.1	8.4	44.3	43.1	.1
2,000–4,999	101,463	1.1	12.9	55.8	29.5	.7
5,000–9,999	75,253	----------	20.1	48.6	30.9	.4
10,000 and more	4,100	----------	----------	----------	100.0	----------
West	266,553	4.5	7.8	56.5	29.5	1.7
Below 500	17,985	3.7	6.9	31.7	56.3	1.4
500–999	21,740	.5	.9	68.2	30.2	.2
1,000–1,999	48,022	9.8	4.2	49.4	30.1	6.5
2,000–4,999	89,910	3.9	8.2	56.7	31.2	----------
5,000–9,999	49,051	3.0	13.7	47.6	33.7	2.0
10,000 and more	39,845	4.0	8.0	80.6	7.4	----------
U. S. service academies	40,079	5.8	----------	94.2	----------	----------
Outlying parts of the U. S	7,473	6.5	----------	55.6	37.7	.2
Below 500	375	46.7	----------	----------	53.3	----------
500–999	835	23.1	----------	43.5	31.8	1.6
1,000–1,999	----------	----------	----------	----------	----------	----------
2,000–4,999	3,018	4.0	----------	55.6	40.4	----------
5,000–9,999	3,245	----------	----------	65.1	34.9	----------
10,000 and more	----------	----------	----------	----------	----------	----------

outlying parts of the United States report a substantial increase in housing for single men. Housing facilities for single men at the new Air Force Academy at Colorado Springs constitute the major residential project of the United States service academies.

Enrollment Projections and Residential Construction

One important factor determining use trends in residential construction is enrollment. Some generalizations not apparent on the basis of a geographical distribution may be made when data are tabulated by the number of full-time students enrolled in a college or a university.

Family facilities for faculty members are prominent in the residential planning of institutions enrolling fewer than 2,000 students. As the number of students increases beyond 2,000, housing for married students becomes more important. In most regions, the smaller the enrollment of full-time students, the greater the concentration on housing for single women. Colleges and universities in the West do not follow this pattern but tend to plan one-third of housing expenditures for accommodations for single women irrespective of the number enrolled. With the exception of institutions having enrollments below 500, institutions tend to allocate from 45 to 55 percent of their total housing construction budgets to facilities for single men.

Table 2 shows the emphasis that institutions enrolling 1,000 to 1,999 students in the North Central and Southern regions place upon facilities for married students as compared with their counterparts in the Northeast.

College Readiness Program

BECAUSE OF THE SUCCESS of an experimental program conducted this summer at the University of Delaware, 11 students who might never have set foot on a college campus are enjoying the benefits of higher education. University officials believe it may represent a course of action for universities and colleges all over the Nation.

Labeled the College Readiness Program, the summer course was designed to reclaim for further education able but under-achieving students who, upon graduation from high school, were not properly prepared for college work. Among this group were students who had decided late in their high school careers that they would attend college and then found that they lacked proper requirements. Others, obviously, just had not worked hard enough or had failed to take advantage of their educational opportunities.

The first year of the program brought 20 students to the university. At the close of the summer session, 19 of them applied for admission to the University of Delaware. Ten of the students were accepted, and one was admitted to another institution. Four others have enrolled in extension classes and upon successful completion of their courses may be admitted as regular undergraduates.

The study program for all students consisted of testing, a limited amount of individual guidance, and a remedial English course which included writing, spelling, and reading-study. Six of the students also took a remedial mathematics course. Each instructor submitted personal evaluations of his students and a statement on whether they should be admitted for college work. Tests were administered before and after the course to determine the progress of each student.

High School Girls' Interest in College Education

ONE OUT OF EVERY THREE of the Nation's girls in the 11–18 age range wants and hopes to go to college, according to a study recently completed at the University of Michigan Survey Research Center. This is twice the proportion now in attendance.

The study revealed that only 13 percent of girls wanting to attend college wish to do so primarily to get an intellectual training; that 37 percent have no specific academic motivation; and that 50 percent want jobs that represent professional extensions of the traditional feminine role—social work, teaching, and nursing.

TV vs Conventional Instructional Costs

IN AN EXPERIMENT conducted at Penn State University in 1956–57 comparative cost estimates were made of instruction by TV and by conventional methods. It was found that TV classes in elementary psychology, accounting, air science, and sociology were presented at a cost of $52,000, whereas conventional instruction previously cost $92,000.

Organized Occupational Curriculums: Enrollments and Graduates, 1956

By HENRY H. ARMSBY, WALTER C. EELLS, AND S. V. MARTORANA*

A VARIETY OF STUDIES in the past few years have pointed to the marked increase in number of students who will be seeking entrance to institutions of higher education in the challenging years ahead. Not only is the number of these students expected to increase greatly, but probably variations in their needs, tastes, and abilities will necessitate greater attention to differentiation of facilities and of curriculums better adapted to meet their varied needs and abilities.

The critical manpower needs of the Nation in various professional and subprofessional fields have placed increasing emphasis on the importance of the preparation of young men and young women for these fields. Much of this preparation can be most effectively done in curriculums of college level but of shorter duration than the traditional curriculums leading to the baccalaureate degree.

This need has been met, in part, by the organization of separate institutions—offering programs basically 2 years in length—such as junior colleges, normal schools, and technical institutes. In some cases, also, curriculums of less than baccalaureate level have been offered by 4-year institutions. It seems likely that in the future increasing attention will be given to such courses in various types of institutions.

For many years the Office of Education has collected and published detailed information on enrollments and graduates of 4-year undergraduate curriculums and of graduate and professional curriculums in the colleges and universities of the United States. Little information, however, has been published on organized occupational curriculums of less than baccalaureate level.

Such curriculums have been given for many years and with increasing frequency and growing enrollments not only in junior colleges, technical institutes, normal schools, Bible institutes, and other institutions of less than baccalaureate level, but also in standard colleges, universities, and professional schools. Hence there is a growing need for a comprehensive survey of this level of American higher education as basic to future intelligent and well-planned educational developments.

The foregoing paragraphs indicate the growing importance of comprehensive systematic information, collected at regular intervals, on organized curriculums of less than baccalaureate level. More than a year ago, the American Society for Engineering Education asked the Office of Education to assume major responsibility for the collection of information on enrollments, graduates, and related data on technical-institute type of education in all classes of higher educational institutions in the United States. This request was supplemented by a somewhat similar one from the National Committee for the Development of Scientists and Engineers, now the President's Committee on Scientists and Engineers.

Full consideration of these requests and other related factors caused the Office of Education to decide that such a survey ought to be made annually and that for completeness it should include other types of organized occupational curriculums of less than baccalaureate level as well as those commonly thought of as the technical-institute type. This article reports briefly the results of the first such annual survey.

Definitions

The field under consideration in this survey has been commonly referred to in previous studies as terminal education, semi-professional education, terminal-vocational education, occupational education of college grade, and by other terms none of which are entirely satisfactory.

For the present study the term "Organized Occupational Curriculum" has been adopted, defined in the questionnaire circulated to all institutions of higher education, as follows:

> CRITERIA. For purposes of this survey, an organized occupational curriculum is one which meets *all four* of the following criteria:
>
> a. *High-school graduation* (or equivalent, including maturity) is required for admission to the curriculum.

*Chief for Engineering Education, Consultant in higher education, and Chief for State and Regional Organization, respectively, Office of Education.

b. The curriculum is designed to prepare students for *immediate employment* in an occupation or cluster of occupations, rather than for further, advanced study leading to a bachelor's or higher degree.

c. Completion of the curriculum requires *at least 1 but less than 4 years* of fulltime (or equivalent) attendance. A "year" means an academic year of approximately 9 months.

d. The curriculum leads to a certificate, diploma, associate degree, or other *formal award*, signifying that the student has completed an *organized* curriculum in an occupational area.

Institutional Coverage

Copies of a 6-page questionnaire were mailed March 6, 1957, to the 1,886 institutions of higher education listed in the Office of Education's *Education Directory 1956–57, Part 3—Higher Education.*

Table 1.—Organized occupational curriculums: Summary of questionnaire returns

Item	Total	4-year institutions	2-year institutions
Number of questionnaires sent out, Mar. 6, 1957	1,886	1,361	525
Number returned by Sept. 3, 1957	1,753	1,283	470
Percentage returned	92.9	94.3	89.5
Number not returned	133	78	55
Number with data on organized occupational curriculums	660	348	312
Percentage with data on organized occupational curriculums	35.0	25.6	59.4

The number and type of institutions which replied are shown in table 1.

Highlights of the Study

- A total of 144,512 students were enrolled in 1956 in organized occupational curriculums of at least 1 but less than 4 years in junior colleges, technical institutes, and other institutions of higher education in the United States.
- Of this total number, 57,622 were enrolled in engineering-related curriculums; 86,890 were enrolled in non-engineering-related curriculums.
- Two-thirds of these students were enrolled on a full-time basis. Slightly more than half of them were in publicly controlled institutions. Slightly more than half of them were in various types of 2-year institutions, principally junior colleges.
- A total of 37,096 students graduated from organized occupational curriculums in 1956—11,742 from engineering-related curriculums, 25,354 from non-engineering-related curriculums. Of the total number, 58 percent were men; 42 percent were women.
- From almost two-thirds of the organized occupational curriculums graduation was recognized by the conferral of the associate's degree, most frequently the associate in arts.
- Organized occupational curriculums were offered by 660 institutions of higher education in the

Table 2.—Graduates and enrollment in organized occupational curriculums 1956

Group	Graduates			Enrollment		
	Total	Men	Women	Total	Full-time	Part-time
All organized occupational curriculums	37,096	21,398	15,698	144,512	93,859	50,653
In 4-year institutions	17,251	9,250	8,001	62,987	34,965	28,022
In 2-year institutions	19,845	12,148	7,697	81,525	58,894	22,631
Engineering-related curriculums	11,742	11,662	80	57,622	32,498	25,124
2- or 3-year curriculums	9,103	9,029	74	51,065	29,885	21,180
1-year curriculums	2,639	2,633	6	6,557	2,613	3,944
Non-engineering-related curriculums	25,354	9,736	15,618	86,890	61,361	25,529
2- or 3-year curriculums	22,008	9,127	12,881	79,153	56,592	22,561
1-year curriculums	3,346	609	2,737	7,737	4,769	2,968
Publicly controlled institutions	20,794	12,089	8,705	79,982	55,127	24,855
Engineering-related	5,980	5,945	35	32,324	19,784	12,540
Non-engineering-related	14,814	6,144	8,670	47,658	35,343	12,315
Privately controlled institutions	16,302	9,309	6,993	64,530	38,732	25,798
Engineering-related	5,762	5,717	45	25,298	12,714	12,584
Non-engineering-related	10,540	3,592	6,948	39,232	26,018	13,214

United States in 1956, more than a third of those in the country. More than a quarter of the 4-year colleges and universities offered such curriculums; more than two-thirds of the 2-year junior colleges, technical institutes, and normal schools.

Statistical Summary

Further details on the number of graduates and enrollment in organized occupational curriculums for various groupings of the 660 institutions are shown in table 2.

A much more detailed report and analysis of the findings of this survey will be published as Office of Education Circular No. 512, which will be available in the near future. It will contain numerous other summary tables and detailed tabulations for each type of curriculum in each of the 660 responding institutions.

Higher Education in the USSR

The following report is a condensation of Ch. IX, p. 171–200 of EDUCATION IN THE USSR, published by the U. S. Government Printing Office, 1957. The book was prepared by the International Educational Relations Branch, Division of International Education, Office of Education, U. S. Department of Health, Education, and Welfare.

THE TERM "higher education" in the USSR refers to programs of 4 to 6 years beyond secondary school which prepare for a career in a given field. Two-year courses such as those for training kindergarten and primary school teachers are classified as semiprofessional training. Higher education as it is understood in the United States does not have an exact parallel in the USSR.

The principal functions of Soviet higher educational institutions, as outlined by a Soviet educator, are: (1) To prepare qualified specialists who have a communist point of view for all branches of the national economy and culture; (2) to carry out research work which will be of both immediate and long-range benefit to the USSR; (3) to popularize scientific, technical, and scholarly knowledge and the most recent findings of research among "the masses of the population."

In law and practice the Soviet regime has made it evident that higher education in the USSR is not designed for all students desiring the opportunity. Admission is admittedly circumscribed by possession of a satisfactory political record, opportunity to acquire secondary education, academic competence and particular aptitudes, and adequacy of resources to withstand the loss of potential income. This policy appears to result from Soviet planning requirements for manpower and from experience gained by trial and error in the first decade and a half of the Soviet regime.

Concentration of Institutions

Higher educational institutions continue to be concentrated in a few areas. Soviet announcements in 1956 state that higher education is available in 271 cities. Six cities account for more than one-fourth of the total number of higher institutions with Moscow and its immediate environs containing some 90 schools of university level and about one-fifth of the total number of students. In 1951, as many new students were reportedly admitted to higher schools in Moscow as were admitted to all the schools of the Ukraine. Moscow facilities, together with those in Leningrad, appear to serve at least 80 percent of those studying for the doctor of science degree and probably 60 percent of those for the candidate of sciences.

Percent of College-Age Students Enrolled

In the United States about 25 percent of all college-age students are enrolled in college; in the USSR it is estimated that between 8 and 12 percent are enrolled, including full-time and part-time students. In the United States women constitute about 37 percent of the student body; in the USSR, about 50 percent, except during World War II when women students outnumbered men. The preponderance of women students in schools training teachers and physicians (about 80 and 60 percent respectively) is compensated for by lower percentages in the engineering schools, estimated at between 30 and 40 percent.

Organization

The heads of universities and academies have the title of rector; the heads of other Soviet higher educational institutions, the title of director. The rector or director is held responsible for administration and supervision of the institution and for what is done in its name. He is responsible both to the Directorate for Educational Institutions of the ministry having financial jurisdiction over his school and to the USSR Ministry of Higher Education for organization of the teaching program, caliber of graduates, and the scientific research undertaken. Although he is nominated for his position by the controlling ministry's educational directorate, he is appointed and may be dismissed by the Ministry of Higher Education. Usually he is a member of the Communist Party—the Rector of Moscow University is often cited as an exception—and frequently is a scholar with administrative ability.

The position of deputy director for academic and scientific affairs—called prorector in universities and academies—is expected to be held by a person recruited from the best qualified professors in one of the school's basic disciplines. Western visitors usually state that they have been impressed with the caliber of men holding this office. According to reports the deputy director is not, as a rule, a Party member. He is responsible to the director for the training program and for research. His appointment and dismissal are subject to the recommendation of the controlling ministry's Directorate for Educational Institutions and action by the USSR Ministry of Higher Education.

In large institutions the deputy director for academic and scientific affairs may have assistants to whom he delegates certain responsibilities such as the supervision of part-time training programs and postgraduate training and research.

The deputy responsible for administrative and financial affairs is appointed by the director. The number and type of duties assigned the deputy's assistants depend for the most part on size of the institution. If a major construction project like a dormitory is undertaken, an assistant may be brought in temporarily to handle problems involved.

Academic Council

The executive organ of the Soviet higher educational institution is the academic council. It is chaired by the director and composed of deputy directors, deans of faculties, heads of departments, several ranking professors, the chief librarian, secretaries of the institution's Party organizations, a representative from each trade union and social organization functioning within the school, and possibly a representative of the responsible ministry. Scheduled to meet at least once a month, this group deals with general problems, adapts plans and programs to Party policy decisions, formulates plans for teaching and research, and incorporates recommendations submitted by each department into an integrated plan for the whole institution. The academic council appoints staff members to positions as assistants, submits nominations for the posts of professor and docent, and judges the dissertation defenses for degrees of candidate of sciences and doctor of sciences.

In large schools, each faculty has its academic council with the faculty dean as chairman. The council carries out the same general functions as the council for the institution, including the judging of dissertation defenses when it is empowered to do so by the Ministry of Higher Education.

Faculties

The major teaching and administrative unit of a Soviet higher educational institution is the faculty composed of several departments in the same major field or discipline. In universities, the usual faculties are physics-mathematics, chemistry, biology, history, and philology. In economics institutes, faculties include industrial economics, agricultural economics, trade economics, finance and credit, accounting, and statistics. The average Soviet conservatory of music has major divisions for piano, orchestration, voice, theory of composition, choral conducting, and opera-symphony conducting. Most medical institutes have a single faculty of general medicine, pharmacology, or dental medicine; if there are other divisions, they are usually in addition to general medicine. The 16 Soviet institutes devoted to physical culture list one faculty each. The usual institution has from 3 to 6 faculties.

At the head of every faculty is the dean, chosen by the director and the academic council from among the professors of the faculty. The dean is charged with administration and general supervision of teaching and research work in his field, planning future programs, and checking on current progress. He is particularly responsible for organizing entrance examinations for undergraduate and graduate applicants and for obtaining the best possible students to fulfill his faculty's enrollment quota.

In addition to the normal daily 6 hours of teaching and research work, the professor, docent, or instructor fulfilling the functions of faculty dean or deputy dean is expected to spend a minimum of 3 hours daily in the dean's office for which he is scheduled to be paid extra—the equivalent of 50 percent of his base salary.

Departments

A department is headed by a chairman—sometimes a full professor, sometimes another member of the departmental staff; not necessarily the person considered to be the strongest specialist in the department. He is elected by his associates on the Academic Council, subject to approval by the Ministry of Higher Education. He is responsible for general supervision of teaching and scientific research and for laboratories, library facilities, and museum or scientific collections. He has the right to recommend new staff members. Appointments of ranking staff members are subject to confirmation by the Ministry of Higher Education; other appointments are confirmed by the institute director. In addition to his duties as departmental chairman, for which he is scheduled to receive extra pay, he is expected to carry a full teaching load and devote an average of 3 hours a day to research.

The departmental staff may include, in addition to the chairman, four or five professors, docents, instructors, and assistants, a few postgraduate students and several specialists with research duties only. The departmental research staff may include some senior research workers; it is largely made up of junior personnel such as laboratory technicians and "preparers."

A department carries out a program approved by the head of the institution in conformity with national interests. The annual plan includes research in addition to teaching, preparation of publications, supervision of extracurricular activities, and training of graduate students. The chairman is responsible for seeing that staff members take refresher courses on basic tenets of communism, keep informed on latest political ramifications of their specialties, work to improve their professional qualifications and complete substantial research.

Although Soviet professional staff members are not granted sabbatical leave, the State and Party strongly back a "creative research" leave policy. By "creative research" is meant research which promises to make a distinct contribution to the Soviet economy. The request, containing an outline of the proposed project, is submitted to the Academic Council for approval.

At monthly or bimonthly departmental meetings, the staff reviews and discusses manuscripts for textbooks, articles for professional journals, teaching aids, new course materials, outlines of theses, progress reports of graduate students, and problems related to the research program. Now and then specialists from industrial plants present papers on problems of special interest to the department. This association of industry with academic institutions, developed particularly since World War II, is highly favored by the State.

Staff Appointments

Appointments to the academic ranks of "assistant" and "instructor" are awarded by the institution's Academic Council. Persons with a higher education who show aptitude for teaching and research work receive the award of "assistant," and assistants who have demonstrated unusual promise as members of the teaching staff are given the rank of "instructor." Appointments to the ranks of "professor" and "docent" require confirmation by the Supreme Certification Commission of the USSR Ministry of Higher Education. Usually a "professor" holds the academic degree of "doctor of sciences" and a "docent" that of "candidate of sciences."

Vacancies are filled on a competitive basis after being advertised in the press. Selections for posts of professor or docent are made by the Academic Council of the institution voting by secret ballot on applications submitted. Teaching staff positions are subject to renewal every 5 years—incumbents competing with others who have submitted applications. As a rule, there is little shifting among professors and docents. Dismissal or transfer is said to be unusual; the 5-year reappointment is intended to keep staff members on their toes.

Admission Policy and Procedure

Citizens under 35 years of age who have completed a 10-year secondary education and passed State examinations for the "certificate of maturity" are eligible to apply for admission to a higher educational institution. (Those over 35 may apply for admission to a part-time program at night or in a correspondence course in a field related to their occupation.) Students from among the top 5 percent of the graduates of specialized secondary schools

and students from industry, agriculture, or other business also may apply. Applicants in these latter two categories may apply only to institutions or faculties offering professional training along the same lines as their specialized secondary schooling or their job experience. It is estimated that they constitute from 4 to 10 percent of the students annually admitted.

Entrance Examinations

With the exception of gold medal honor students, who are admitted automatically, students are selected on the basis of competitive entrance examinations. Type of entrance examination depends on the faculty or field. For example, students applying for admission to an engineering institute or to a science faculty are required to pass comprehensive examinations in mathematics, physics, chemistry, Russian language and literature, and one foreign language (English, German, or French). Applicants to faculties of law, geography, history, philosophy, or philology are examined in Russian literature and language, a foreign language (English, French, or German), history of the USSR, and geography.

Applicants in such fields as the arts, architecture, music, and physical culture must demonstrate aptitude and ability in their specialty. In a few institutions in the non-Russian republics—primarily pedagogical institutes—where instruction is given in the native language, applicants also are required to take an entrance examination in the native literature and language.

Factors Determining Choice of School

Students are not told to which institution they must apply. Their choice is restricted, however, by a number of factors. Foremost is the fact that Soviet higher schools can absorb only 30 percent of 10-year school graduates annually. Thus most young people with a sufficient background to continue their studies must relinquish any thought of doing so. While old well-known centers of learning like Moscow, Leningrad, and Kiev tend to be popular, the cost of living in the larger cities and intense academic competition discourage many students from other parts of the country. On the other hand uniqueness of specialization may limit the student to study in a large center.

To channel students into fields where trained manpower is most needed, the Soviet regime has developed inducements and devices. One inducement is the size of the stipend. Thus choice of specialty by a student intending to enter an engineering field, for example, might be influenced by the stipend available in mechanical engineering as opposed to electrical or chemical engineering. As choice of a particular aspect of a field is influenced, so is selection of one field as opposed to another. The fixed enrollment quota also is a channeling device. As needs of the State change, so do enrollment quotas and the size of stipends in given fields.

Students making normal progress are granted stipends. The amount is based not only on the field but on the year of study and the quality of the student's work. Those who make excellent marks are granted a 25-percent increase the subsequent semester for as long as they continue to do outstanding work. An exceptional student may receive three or four times as much as an average student. It is estimated that from 10 to 20 percent fail to maintain a consistently satisfactory grade average and have to forfeit their stipends until they bring their grades up to par. Stipends are said to be sufficient to cover bare necessities; it is reported that many students receive supplemental help from home.

If a young man is not admitted to a higher institution before he is 18, he will be forced to register for the draft. Once he is so registered Soviet higher educational and semiprofessional institutions are not permitted to accept him; if he is enrolled in school, Soviet draft provisions accord him deferment.

Types of Institutions

There are five major branches of training in Soviet higher educational institutions: Engineering-industrial, agricultural, socioeconomic, and the educational and health fields. In 1955–56 professional training was reported as being provided by 765 schools, of which 33 were universities and 732 were specialized higher educational institutions, variously known as institutes, academies, higher schools, and conservatories. There also were an undetermined number of military, security police, and Party schools. Approximately 1,867,000 students were reported enrolled in these schools in 1955–56; about one-third were part-time students in evening or correspondence courses.

Universities are centers of general theoretical study. They offer a 5-year course of studies in one of the basic disciplines and are organized into faculties. An institute is sponsored by a particular branch of the economy such as industry, culture,

transport, trade, or agriculture. An institute is a single faculty institution offering courses of 4–6 years in length depending upon the field. There are also 24 multi-faculty polytechnical and industrial institutes which offer 5½-year courses in applied science and which prepare about one-fourth of the engineers.

Training Organization and Methods

Instruction in higher educational institutions is based on curriculums approved by the USSR Ministry of Higher Education. The academic year is divided into 2 semesters and there are vacation periods of 2 weeks in the winter and 2 months in the summer.

By law, no more than 6 hours of instruction in 3 different subjects may be given in a single day. Instruction is planned for a 6-hour day, 6 days a week. An academic hour is about 45 minutes.

Lectures constitute the principal form of instruction. The usual ratio is 1 hour of lecture to 1 of laboratory or other work. In the first year, lectures predominate. In the humanities, and in socio-economic and political subjects, the work is more often like a seminar. Seminars dealing with political philosophy, according to reports of Soviet refugees, tend to become formal question and answer periods, with the teacher giving the "approved" point of view on any given topic.

Students' field work or production practice varies according to field—from 6 to 16 weeks in universities to 40 to 52 weeks in agricultural institutes.

Curriculums

It is a Soviet practice to approve a single standard curriculum for each basic field and specialty, permitting variations only in the most advanced courses. Professional education concentrates on the major field, and whatever courses are taken from another discipline are completely subordinated to the major field. Thus, language study is geared specifically to the needs of the student's field. Regardless of major, however, students must complete requirements in communist philosophy which is oriented toward the professional field. In the humanities and the social sciences there is heavy emphasis on political aspects of material studied.

Diplomas and Graduation

Diploma work—thesis, laboratory experiment, or field investigation—is usually required of a student graduating from a program of 5 or more years and sometimes of students in 4-year programs. This work appears to approximate thesis requirements for the American first professional degree.

University education terminates in State examinations conducted orally, in public, before committees of professors appointed by the USSR Ministry of Higher Education. Upon passing the examinations, the student is awarded a diploma. The diploma is mailed to the student's future employer, and the student may pick it up when he arrives at his new job. Graduates are assigned jobs at which they are to remain for 3 years.

Education, Teaching, and Research

By law, the teaching staff of Soviet higher educational institutions is required to spend an average of 3 hours a day on research. This policy is based on assumptions that: (1) Such utilization of personnel will result in developing basic and applied research with the utmost speed; (2) research is essential to industry, agriculture, medicine, and the national welfare as a whole; and (3) only through constant research can the professional staff keep from getting stagnant and out of date.

Importance is attached to organizing Soviet higher education and research as an integrated unit. And the Party and State constantly encourage close cooperation between school and society at large. Teachers serve as consultants and take on contract work connected with their specialty. Students considered to be most promising are invited to work on special problems connected with the research activities of an institution. Extracurricular student scientific societies are sponsored and by 1950–51, some 20 percent of the students in Soviet higher educational institutions were estimated to be participants.

Part-Time Programs

The number of students obtaining a higher education in the USSR on a part-time basis (correspondence-extension and evening courses) by 1955–56 reportedly approximated one-third of the enrollment.

The fields and courses open to study by correspondence are necessarily limited. For example, of the total correspondence enrollment in 1950, 70 percent were reported to be teachers taking pedagogical courses, 11 percent industrial workers taking engineering courses, 5.8 percent majoring in eco-

nomics, 5.7 percent in law, 3.8 percent in agriculture, and 3.7 percent in other fields.

Evening courses, like the correspondence-extension training programs, appear to be particularly popular with teachers who wish to raise their professional qualifications and with industrial workers who are specializing in engineering fields.

Doctor of Social Science Program Surveyed at Syracuse

A PROGRAM leading to the Doctor of Social Science was set up at Syracuse University 12 years ago on an experimental basis. The program took the emphasis off specialization and put it on broader learning in the various social science fields—social psychology, economics, anthropology, and history.

Under a grant from the Fund for the Advancement of Education, a self-survey is now to be made of the program. The survey's objectives will be to determine the contribution the program is making toward meeting the need for college social science teachers, to consider the program's relevance to the preparation of graduate students for other professional occupations, and to assist in planning for the program's future development. The study calls for an evaluation of the program's organization, content, administration, policy, dissertation requirements, and overall effectiveness.

Public Health Service Graduate Nurse Program

APPROXIMATELY 800 GRADUATE NURSES will receive advanced training this year in the second year of a Public Health Service program to help overcome a shortage of nurses qualified for teaching and administrative positions. Grants totaling $3 million have been made to 60 schools of nursing and public health throughout the country. These institutions in turn will award traineeships to qualified nurses interested in teaching positions in schools of nursing or in supervisory and administrative posts in hospital nursing services and public health agencies.

Last year, 587 traineeships were made available to 56 institutions under a $2 million appropriation. The law authorizing the program was passed in July 1956.

Case Book on Education Beyond the High School

UNDER THE GENERAL TITLE of "Practices Underway To Meet the Problems of the Day," and sponsored by the President's Committee on Education Beyond the High School, the Office of Education has issued the first series of cases in higher education. The service is being undertaken for the Committee by the Division of Higher Education, and the first series was prepared by S. V. Martorana, chief for State and regional organization.

The titles of cases in the first series are: "Cooperative Intercollegiate Program of Graduate Studies in the Humanities and Social Sciences, Seven Southern California Colleges;" "Intercollegiate Committee Cooperation, Amherst College, Mount Holyoke College, Smith College, and The University of Massachusetts:" "Statewide Study of Higher Education, Florida Board of Control;" "Space Utilization Study, Marietta College:" "(Evening College for Adults) The Earlham College-Indiana Univeristy Center;" and, "Special Secondary School, Teacher Education Program, The University of California, Berkeley, California."

College Students Under Korean GI Bill

MORE THAN HALF of the Korean GI trainees, or nearly 1 million, have gone to college. One-quarter of all male college students are veterans, and the Veterans' Administration predicts that, as late as 1960, 1 out of every 7 men in college will be there under the Korean GI bill.

Dartmouth Program To Improve High School Physics

IN A NEW APPROACH to science education, Dartmouth College last month invited students from 17 high schools in the twin-state area to attend a lecture-demonstration in physics. Using its staff and facilities, the college inaugurated a program of monthly lecture-demonstrations to supplement the high school physics course. The first illustrated "Newton's Three Laws of Motion."

The series is designed to be an integral part of the high school course and will coincide with the current

phase of study. The project grew out of a recommendation by the National Association for the Advancement of Science that science teaching might be improved by closer cooperation between high school and science teachers.

Obstetrical Care for Student Wives at MIT

BECAUSE THE NUMBER of married students at the Massachusetts Institute of Technology has increased sharply in recent years, MIT has entered into an agreement with the Boston Lying-In Hospital under which it will provide complete obstetrical care for MIT students' wives. Although the costs of the plan are borne by the student, the program guarantees excellent care at a fixed minimum charge.

The 1,000 married students at MIT currently have about 1,000 children, and it is estimated an additional 200 children will be born this year.

As a part of the program, MIT has added to its medical department an obstetrician who will participate in both prenatal and post partum clinics at the Institute and will supervise the operation of the program at the Boston Lying-In Hospital.

Michigan State Graduates Approve General Education

RECENT MICHIGAN STATE UNIVERSITY graduates have voted five to one in favor of the type of general education the M. S. U. Basic College provides. This is the answer from a survey of nearly 3,000 graduates of the past 3 years.

The Basic College provides courses in natural science, social science, humanities, and communication skills for every M. S. U. student, regardless of his major. The courses total 45 credits, about one-quarter of the academic work each student takes for graduation. Graduates especially endorsed the general education content of these courses, pointing out their cultural value, their help in developing new interests, their practical information and "the increased thinking ability they generated." They voted six to one in favor of continuing the basics as required, not elective courses.

NEW PUBLICATIONS

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(*2*) *Free Publications: Request direct from the agency issuing them.*

From the Office of Education

Administrative Facilities in School Buildings, by James L. Taylor, under the direction of Ray L. Hamon. Washington, U. S. Government Printing Office, 1957. Paper, 52 p. 45 cents. (Special Publication No. 6.)

Education Directory 1956–57, Part 4, Education Associations, by Edith Haswell Rogers. Washington, U. S. Government Printing Office, 1957. Paper, 79 p. 30 cents.

Education in the USSR, by Division of International Education. Washington, U. S. Government Printing Office, 1957. 226 p. $1.25. (Bulletin 1957, No. 14.)

Improving Reading in the Junior High School, by Arno Jewett *and* Others. Washington, U. S. Government Printing Office, 1957. Paper, 165 p. 60 cents. (Bulletin 1957, No. 10.)

Local School Construction Programs, by N. E. Viles. Washington, U. S. Government Printing Office, 1957. Paper, 80 p. 55 cents. (Bulletin 1957, No. 20.)

Statistics of Public-School Libraries, 1953–54, Biennial Survey of Education in the United States, 1953–54, Chapter 6. Nora E. Beust *and* Emery M. Foster. Washington, U. S. Government Printing Office, 1957. Paper, 73 p. 30 cents.

Supervisory Personnel Development, A Guide for Organizing Trade and Industrial Training Programs, by Earl M. Bowler. Washington, U. S. Government Printing Office, 1957. Paper, 40 p. 25 cents. (Vocational Division Bulletin No. 266, Trade and Industrial Series No. 66.)

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Other Government Agencies

Graduate Student Enrollment and Support in American Universities and Colleges 1954. Washington, U. S. Government Printing Office, 1957. (National Science Foundation 57–17.) Processed, 302 p. $1.50.

Non-Government Publications

Obtain direct from the publishers. Prices are indicated when known.

The Boundaries of the Campus: A History of the Extension Division of the University of Wisconsin, 1885–1945, by Frederick M. Rosentreter. The University of Wisconsin Press, 811 State Street, Madison, 1957. Cloth, 210 p. $3.50.

Directory of Fellowships in the Arts and Sciences, L. Virginia Bosch, *director*, Washington, D. C., 1957. Directory of Fellowships, Room 79, Biochemistry Bldg., University of Wisconsin, Madison 6. Printed, 126 p. $2.50.

Education for Planning: City, State and Regional, by Harvey S. Perloff. Baltimore, Md., The Johns Hopkins Press, 1957. Cloth, 189 p. $3.50.

A Guide to Graduate Study Programs Leading to the Ph. D. Degree, Frederic W. Ness, *ed.* Washington, D. C., Association of American Colleges, 1957. Cloth, 335 p. $5.

Interinstitutional Cooperation in Higher Education: A study of Experiences with Reference to New York State, by Merton W. Ertell. Albany, the University of the State of New York, the State Education Department, 1957. Paper, 118 p. Free.

Society's Stake in Mental Health, A Report to the People. Social Science Research Center of the Graduate School, University of Minnesota, 1957. Paper, 73 p.

Tuskegee Institute: Report of the Seventeenth All Institute Conference, Sept., 13–14, 1957. Tuskegee Institute, Alabama, 1957. Processed, 100 p.

The Appraisal of Applicants to Medical School (Helen Hofer Gee *and* John T. Cowles, editors). Evanston, Ill., Association of American Medical Colleges, 1957. 228 p. $3, cloth; $2, paper.

Visual Methods in Education, by W. L. Sumner. New York, N. Y., Philosophical Library, 1957. Second Edition. 231 p. $6.

Treats the fundamental principles of visual methods and stresses their importance in teaching; presents many technical details on procedures and the use of equipment.

Within the Ivy: A Guide for New Students Presented by the Class of 1957. Columbia, Mo., Stephens College, 1957. 142 p.

Suggestions to new students at Stephens College to help them become well oriented to their new experiences and to understand college life.

World-Wide Graduate Award Directory, Volume I. Box 99, Greenpoint Station, Brooklyn 22, N. Y., 1957. Paper, 28 p. $2.

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